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Q. and A. With an Optimistic Grant Swinger

Following is the latest in an occasional series of conversations with Grant Swinger, a long-time observer of science-and-government relations and Director of the Center for the Absorption of Federal Funds:

SGR: How are you faring under the Reagan Administration?

Swinger: In accordance with tradition, we never miss an opportunity to complain. But as a matter of fact, we're doing quite well. We long ago learned the importance of keeping in step with the times. So, for example, we're out of energy research. We did quite well on converting coal to oil, and came close to landing a contract for converting oil to coal. . .

SGR: Oil to coal?

Swinger: Sounds ridiculous, but not too long ago,

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they were snapping at anything. Anyway, we see a lot of new growth opportunities. Health-care research looks good and we're hot on the trail.

SGR: Details, please.

Swinger: Well, just between us, anyone knows that if people don't have to pay to go to the doctor, they'll go more often than if they have to pay. But the government can't seem to understand this, and we're happy to oblige with as many studies as they're willing to finance. So, we set up comparative groups and count how often they go when it's free, and how often they go when they have to pay. Needless to say, it always turns out exactly the way you'd expect it, but that's not our problem.

SGR: Of course not. What else are you doing?

Swinger: We're into studies of scientific fraud. That's never going to be a big field, but it's easy to fan worry on the subject, since there's no way of really knowing whether fraud is a big or a little problem. We'll get a workshop or two out of it and then a conference, and then we'll publish the proceedings. None of this will make a bit of difference one way or another on fraud, but the press eats it up.

SGR: Other projects?

Swinger: We're into gene splicing, cloning, DNA and all that stuff. We're well along with the Mega-Chicken project...

SGR: Mega-Chicken?

Swinger: Oh, yes. That was announced last year. The

beef industry would be no place at all if steers weighed five or six pounds. That got us thinking about the poultry industry, and so we're on the way to the quarter-ton chicken. A really big beast, I assure you, and it's going to permit economies of scale that are going to revolutionize the industry, though we're now beginning to feel that the gains might not be as great as we had originally expected.

SGR: Why's that?

Swinger: First of all, a lot of chicken coops will have to be redesigned and replaced. But beyond that, it turns out that the Mega-Chicken is pretty vicious. We've had some unfortunate experiences in handling them.

SGR: Are you involved in defense research?

Swinger: Yes, of course. That's made a very nice comeback after a number of slow years. Many years ago we established the Center for the Resolution of Conflict Through Violence, and it did quite well. But when

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In Brief

The anxiety-ridden agricultural research community was soothed by a deliberately bland communique following the White-House-sponsored Workshop on Critical Issues in Agricultural Research in mid-June (SGR Vol. XII, No. 10). But the final report, now being drafted, won't be so soothing. It's likely to call for pruning a lot of dead wood from the research system, more competitive research, and closer ties between agricultural scientists and researchers in other fields.

White House Science Adviser George A. Keyworth is said to feel there's no reason why the quality of agricultural research should be spared from the kind of scrutiny that's being applied to other areas of federally supported research.

As for the Congressional politics of ag research: Among those looking to shake up the antiquated research system, it's not gone unnoted that agriculture isn't the powerhouse that it used to be on Capitol Hill, as witness recent incursions on two heretofore sacred items—dairy and tobacco price supports.

In the opinion of one White House aide, apart from 72-year-old Jamie L. Whitten (D-Miss.), now in his 20th term and Chairman of the Appropriations Committee and its agriculture subcommittee, there's no one of great power left to look after traditional agricultural interests.

...Plans to Revive Breakthrough Institute

(Continued from page 1)

detente came along, we had to mothball it. Now we're starting it up again in response to all sorts of promising opportunities. For example, we see a bottomless gold mine in studies of export restrictions on high technology. It's quite obvious that anything you sell the Russians must be useful to them in some way or they wouldn't buy it. It's also obvious that anything that helps their civilian economy is ultimately of some benefit to their military economy. I'm just delighted to see people hoping that we can sell them stuff without helping them. It sets up a situation that's ideal for the Center for the Absorption of Federal Funds. And then, too, it provides us with opportunities to work for companies that want to sell to the Russians. We'll have to add a wing to the building to handle this one.

SGR: Are other projects underway?

Swinger: No end of them. We notice that we're back to one of those phases where politicians are getting impatient about research. They want quick results. And that means work for one of our major subsidiaries, The Breakthrough Institute.

SGR: What's that?

Swinger: The BI isn't interested in years of painstaking research. We want the headlines that come from breakthroughs, because that brings in the grants. And we have found it to be the case, time after time, that the announcement of an impending breakthrough creates as much excitement as the announcement of an actual breakthrough, and two weeks later, no one remembers the difference. Interferon is a good example. Whenever we feel that some good public notice would be helpful, we make an announcement about interferon. It doesn't matter what we say. We can say anything, so long as it sounds promising or hopeful. Particle physics is another field that's useful for The Breakthrough Institute. We can always round up another particle when the budget is in trouble. It's only the particle physicists who can understand the news accounts about new particles, and sometimes I'm not even sure about them. But that doesn't stop the press from running on and on about what it means, when, in fact, it usually doesn't mean anything.

SGR: Do you see any major new fields opening up for your research organization?

Swinger: We see a gold mine in economics.

SGR: Really?

Swinger: There is no other field of research in which it is possible to be seriously wrong about important matters time after time and still have the customers regularly coming back for more. If you tried it in chemistry or physics, you'd be fired. If you did it in medicine, you'd lose your license and go to jail. But, we have noticed with considerable interest that economists are never held to account for what they predict. No one ever looks back. So, we're just raring to get into this rack...I mean, this field.

SGR: Thank you, Dr. Swinger.

(Earlier encounters with Dr. Swinger have been assembled in a collection, *The Grant Swinger Papers*, available for \$4.95 per copy, postpaid, from Science & Government Report, PO Box 6226, Washington, DC 20015.)

30 on List for Top NSF Post

While the search goes on for a successor for John B. Slaughter, who's leaving the directorship of the National Science Foundation at the end of the year, a source at the White House Science Office assures SGR that "we're not looking to put in Attila the Hun."

The post is very likely to be filled from a list of 30 names compiled by a panel of the National Science Board, the policymaking body of the Foundation. The White House is not required to pay attention to the Board's recommendations, but the Administration is increasingly bothered by charges that it is insensitive to the interests of higher education. And, unless it wants to give NSF a thorough ideological shake-up—and there's no sign of that—prudence calls for working with the Board. Those on the list, we're told, are all well-acquainted with the workings of academic science, and "none would be an embarrassment to the Administration."

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Pressure Grows for New Arthritis Institute

A political bandwagon is rolling toward the creation of a separate arthritis institute at the National Institutes of Health, and mainstream biomedical-research leaders—who oppose institutional fission at NIH—are increasingly doubtful that it can be stopped.

So far, 36 Senators are sponsoring a bill, S. 1939, which would remove arthritis research from the present National Institute of Arthritis, Diabetes, Digestive and Kidney Diseases and place it in what would be known as the National Institute of Arthritis and Musculoskeletal Diseases. A similar measure, approved in May by the House Energy and Commerce Committee, is expected to go to the floor possibly before the August recess, but if not, surely soon after.

With NIH under budget pressure and other branches of the "disease-of-the-month club" waiting their turn—diabetes is coming on fast—the NIH leadership and influential friends tried to hold back the tide July 20 at a hearing before the Senate Labor and Human Resources Committee.

Chairman Orrin Hatch (R-Utah) was noncommittal, stating, on the one hand, that the current research effort

is "insufficient," but adding that "I'm not certain a new institute at NIH is the answer."

Trying to persuade him that it wasn't were James B. Wyngaarden, the newly installed Director of NIH (who canceled a trip to Japan to attend the hearing); his immediate predecessor in the NIH post, Donald S. Fredrickson, and Arnold Relman, Editor of *The New England Journal of Medicine*. Their basic argument was that arthritis is well looked after in the sharing of NIH's stretched resources, and that a new institute would incur \$4-5 million in new administrative costs that would have to come out of funds that would otherwise pay for research. They also argued that scientific crossbreeding, rather than compartmentalization in a separate institute, holds the greatest promise for arthritis research.

Favoring establishment of a separate institute, and appearing as the leadoff witness at the afternoon-long hearing, was Senator Barry Goldwater (R-Ariz.), who said that the NIH management has been neglecting the disease. The "record shows," he testified, "that arthritis has not received the concentrated attention Con-

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Institute Backers Claim Neglect in NIH Spending

While the managers of biomedical research insist that they and their peer-reviewing colleagues really know best, opponents of the status quo often muster highly persuasive arguments for a Congress that really doesn't know what to believe about the best way to manage disease-related research. An example is to be seen in the following excerpt from testimony July 20 to the Senate Labor and Human Resources Committee by Clement Sledge, Professor of Orthopaedic Surgery at Harvard Medical School and former Chairman of the National Arthritis Advisory Board:

In 1975, Congress passed the National Arthritis Act. To many of us, that signaled the fact that our government recognized the serious and urgent need to focus our efforts on arthritis and musculoskeletal disease research. The Act called for the formation of the National Commission on Arthritis and Related Musculoskeletal Diseases, which went on to conduct a series of nationwide hearings and investigations. In 1976, the Commission submitted its plan for action to Congress. It was clear at that time that important and exciting investigations—especially in genetics, virology, immunology, and biomechanics—offered the promise of major advances in understanding the causes and treatment of these diseases.

Unfortunately, the plan was generally ignored. For

fiscal year 1977 the plan recommended research funding of \$67 million. Only \$37 million was actually spent. With each subsequent year the gap has grown wider still. By fiscal year 1980, the entire NIH was operating on a \$3.4 billion budget. Yet only one and one-half percent of that amount was devoted to arthritis and musculoskeletal research. That amounts to \$1.74 for each arthritis patient in the U.S., or less than \$57 million on diseases that cost society \$30 billion annually...One need only review the significant medical advances coming from the National Eye Institute, which was established in 1968. Evidence shows that, over the years, research supported by the Institute has led to the discovery of ways of treating and preventing certain eye disorders. In addition to benefiting the patient, this research has resulted in direct savings in health care costs and human productivity.

Of course, when the Eye Institute was being established, the same naysayers—the American Medical Association and the Association of American Medical Colleges—were predicting doom for basic research. I submit that it did not happen with the Eye Institute, nor will it happen with the establishment of a National Institute on Arthritis and Musculoskeletal Diseases.

France: Research, Industry Ministries Merged

Paris. After a long struggle at high political levels, the organization of government-supported research in France is about to undergo the most extensive of the many changes that it has experienced in recent years. This is happening as a consequence of the realized ambitions of the highly ambitious Minister of Research and Technology, Jean Pierre Chevenement, who has now extended his jurisdiction to include the mammoth Ministry of Industry.

Chevenement has never hidden the fact that his goal is to create a large and powerful ministry to bring French industry into the major leagues of high technology. But, to accomplish this, he had to wait for the government's first major political reshuffle, and he still has to settle some basic matters with the powerful Ministry of Finance, which retains control of the purse strings.

Chevenement is taking up his new duties within a tense and difficult political and economic context that does not correspond to what he had hoped for. The abrupt acceleration of the rise in unemployment and inflation has forced President Mitterrand to cool the reformist ardor of his government. The new Minister for Research and Industry, as he is now known, has a centralist and authoritative temperament befitting his long

associations with the left wing of the Socialist party. But within the present political climate, which is accentuated by economic unrest that extends far and wide, the minister will have to come across as a liberal and as a protector of competition. In fact, his team has been allowed to release some reports which advocate the maintenance of some traditional industrial and research structures, rather than the wholesale concentration that many feared he would favor.

Prior to the creation of his new ministry, Chevenement had sought to block projects backed by the former Minister of Industry, Pierre Dreyfus, and especially the most important of them: the component plan for integrated circuits. The first words issued by Jean Pierre Chevenement, when he took over the Ministry of Industry, were to affirm that the assistance plans for certain industrial sectors would not be those of his predecessor, but his own. The result was that things were frozen for three months.

The difficulty encountered in getting his three-year research program voted on by Parliament has made Chevenement much more prudent, if not modest, than he was a year ago. Even though the Chamber of

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ARTHRITIS

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gress intended when it set up the present institute in 1950. Arthritis is now grouped with nine other major diseases, including diabetes, digestive disorders and kidney diseases," he said.

Getting to the point of what this and proposals for other new institutes are about, Goldwater—who underwent replacement of an arthritic hip last year—said that a separate institute would "focus attention" on the disease. "This is not just my opinion," he added, "I have received written statements from over 40 groups and experts who support this bill."

Wyngaarden argued that NIH has been providing good growth for research on arthritis and musculoskeletal diseases, with clearly earmarked funds for the two rising from \$27 million in 1976 to \$61 million last year; in addition, he pointed out, a great deal of the basic research that's performed under other labels at NIH actually is of value for arthritis research.

The proponents of a new institute responded that the disease is one of the most prevalent in the US—afflicting one out of seven persons, they said, and costing some \$30 billion a year in medical expenses, lost income, and so forth. In NIH's \$3-billion-plus budget, \$61 million isn't enough, they said. Spending on arthritis is puny, they insisted, and concern about a few

new millions in administrative costs for a new institute is misguided.

During a recess in the hearing, Wyngaarden told SGR that he thinks political support for a new institute has risen to a point where it now seems likely to pass. What might head it off or at least delay it, he said is a proposal, contained in the House Committee bill, to have the Institute of Medicine (IOM) conduct a major review of NIH. In his testimony he said that the proposed IOM study "would review the effectiveness of the existing combinations of disease research programs within the individual national research institutes and of the criteria which should be followed in establishing new or realigning existing national research institutes."

Given the ardor that the NIH mandarins have displayed in opposing the proposed institute, it is worth noting that Congressional staff members handling the issue report very little evidence of interest from biomedical research institutions or their Washington lobbying organizations.

Proliferation of institutes on the Bethesda campus is a proper worry for the senior managers of the government's sprawling biomedical-research enterprise. But from the perspective of NIH's faraway research clients, in universities and hospitals, the fight over a separate institute for arthritis research looks like mere bureaucratic squabbling.

...Basic Researchers Fear Industry Emphasis

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Deputies, where the Socialist majority is overwhelming, at first let Chevenement's original program pass—to increase French research spending from 1.8 percent of the GNP in 1981 to 2.5 percent in 1985—the Senate, which has a conservative majority, wasn't so willing. The Senators added some dozen amendments which, to quote Chevenement, "emasculated" his project and made his plan an "ectoplasm." The Minister of Research showed his anger to Parliament by calling his adversaries "extremely reactionary." Press commentators considered this classification offensive.

A second vote by the Chamber of Deputies took place on June 21 (the Chamber of Deputies, according to the Constitution, has the last word) in order to partially re-establish Chevenement's wishes. This time, he used all his powers to convince the deputies to support France's high-tech future. This is the constant message of the team in power. President Mitterrand's speech at the opening of the Versailles Summit stressed the same theme in an international context, even though the President's assistants at the Elysee had drafted the text without consulting any of the ministries.

Once again, Chevenement, in speaking of the opposition, criticized "not only the excesses of its biased attitude but also the deep lack of understanding by its politicians of scientific research." Never before had science thrown such hard punches outside of election campaigns.

In the meantime, to quote an opposition deputy, Jean Foyer, an eminent jurist, the Chevenement program "is composed of legislative neutrons, that is, articles which have no juridical basis." It is a well known fact, he said, that these programs are nothing but proposals which cover several years, and are always perverted, over the years, by the annual budgets, which are the sole means for actually committing government funds.

Amidst this controversy, Chevenement has concentrated his plan of action on several major points, including:

- A broad geographic distribution of support for research and industry.
- The reduction of the gap between humanist and scientific culture.
- Cultivation of the French language which, like English, must become an international scientific language, in his view.

Basic researchers view the fusion of research and industry with a certain amount of understandable dread, recalling that a similar setup existed under President Giscard d'Estaing, who had established a Ministry of Industry and Research. During a press conference,

however, Chevenement took care to point out that now things would be quite different since he was putting the word Research before Industry.

Basic researchers are nonetheless watching the budget very carefully, and with good reason, since the implementation of the current budget is still blocked by the Treasury. One cannot forget, in addition, that the dollar has increased substantially over the franc in recent months, affecting many R&D purchases.

On the other hand, the government is about to announce that for 1983 only the research, industry and education budgets will increase. This is, therefore, a double good score for the new Minister of Research and industry. But everyone realizes that these figures are only promises. The real preparation of the budget will take place this summer.

It's considered a safe bet that when basic and developmental research funds are managed by the same agency, support intended for basic research is likely to be sacrificed to the short-term needs of industry. This general rule is much on the minds of the basic-research community here because of the emphasis that President Mitterrand gave to utilitarian research in his speech at the Versailles Summit. In that talk, he spoke enthusiastically of the wonders to be had from the new bio-technologies, electronics, and alternative energy sources. It is to be expected that in developing these fields of research, industrial organizations will receive first consideration. It has already been reported that the research budget will be deprived of about \$200 million in order to make good the deficits of CII (International Information Company), which, in a recent nationalization, was separated from Honeywell.

It is also expected that the electronic industries will devour a large part of the R&D budget. A year ago Chevenement had started several studies on various subjects (bio-technology, new sources of energy, robotization, human sciences, etc.) Of all these, the one devoted to electronics is the one which has had the most repercussions. It must be said that its chairman, Abel Farnoux, who is well known in the European electronics industry, is a remarkable salesman of ideas. He has just about proposed the creation of a Secretariat of State for Electronics. But above all, he proposes the launching of 14 "national projects" for the development of new products: a large scientific computer, visualization components, translation aided by computers, and so on.

But French researchers and industrialists will not move unless the government invests a lot of money in these projects. Those in charge of the budget for the Ministry of Research and Industry only have to open the purse strings to inspire industry, which, again, has been noted

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In the Works: Policy Studies Now Underway

Scientific and technical studies that are intended to guide public policy usually are announced when they're launched and then slip from public memory as the months or years roll by on the way to a final report. This is unfortunate, since the opportunity for interested parties to get in their licks, openly or otherwise, is before the final draft leaves for the print shop. Those in the know may try, of course. But, in fact, marathon studies, lacking conclusiveness, frequently tend to be below the threshold of any notice before publication, and many persons concerned about the subjects under consideration never learn of the study until it's over.

As a corrective to this problem, SGR herewith inaugurates "In the Works," an occasional feature that will provide basic information about some of the major policy studies underway at organizations in close relationship to the federal government.

First off, the National Academy of Sciences. (For additional information, staff executives and telephone numbers are listed for each project; the address of the National Academy of Sciences: 2101 Constitution Ave. Nw., Washington, DC 20418.)

Panel on Advanced Technology Competition and the Industrialized Allies. One of the first policy inquiries initiated by Frank Press when he became President of the NAS last year, this study grows out of concerns—as stated in an Academy summary—"that governments are beginning to promote their high-tech industries in ways which threaten to create strains between the industrial nations and which may end by slowing rather than accelerating technological change." The study is expected to produce a set of "rules of the game" for international technology competition, encompassing various subjects, including basic scientific research, of which it is noted: "A nationalistic policy might involve allowing other countries to bear the expense of basic research while making use of the results—but widespread adoption of this approach might leave nobody doing the research."

Chaired by Howard W. Johnson, former President and now Corporation Chairman of MIT, the panel consists of 11 members from academe and industry. An initial draft report of several hundred pages is being refined for publication scheduled for the end of this year. Some \$350,000 in support for the study was lined up from six private foundations and the White House Office of Science and Technology Policy (OSTP), which contributed \$50,000.

The Project Director for the study is Anne Keatley, of the Academy's Office of International Affairs; tel. (202) 334-3470.

Committee on Government-University Relationships in Support of Science. Though there's no lack of studies on this subject, the Committee, which started working last October, was one of the first off the mark in an attempt to examine the effects of Reaganism on federal support of academic research. The study, financed by the Sloan Foundation (\$350,000) and OSTP (\$35,000), is justified on the grounds that "tensions have developed that indicate the need for some adjustments in the state of this enduring partnership. These include process and organizational differences within the universities and between them and the government over such issues as reimbursement for the costs of research, the terms of financial accountability, and the regulation of research." A first draft of a report is now being written; the final meeting of the Committee is planned for November 24, and publication is scheduled by the end of February.

Burke Marshall of Yale Law School is Chairman of the Committee, which numbers 25 members, mostly from academe, with a few from industry; also on the Committee are Donald S. Fredrickson, former Director of the National Institutes of Health, who is a Scholar-in-Residence at the Academy, and H. Guyford Stever, who once headed the National Science Foundation and was Science Adviser to President Ford.

The staff officer for the study is Patricia Warren; tel. (202) 334-2492.

Panel on Scientific Communication and National Security. Created in direct response to last January's urgings by Admiral Bobby Inman, since-retired Deputy
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FRANCE

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by France's increasingly anxious basic scientists.

The grumbling can already be heard in the laboratories of the universities and public-research centers, like the CNRS (National Center for Scientific Research). The improvements set forth in the 1982 budget are still being waited for. Inflation and the sinking franc have cut the purchasing power for scientific supplies and instruments.

Also, as with past governments, the Socialist Minister is being criticized for having created merely an illusion of change in proposing structural reforms. At the CNRS, reform happens almost every year. This summer, there will be another one.

Along with growing doubts about whether the promised funding increases will actually reach basic research, there are also doubts about whether yet another reorganization will have any practical effects.—FS

...Interim Report Soon on Science, Security

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Director of the CIA, for the academic scientific community to heed warnings of Soviet espionage efforts on campus (SGR Vol. XII, No. 1), the Panel has one of the most politically sensitive assignments in the Academy's study portfolio. As an institution rooted in the academic scientific community, the Academy has no stomach for the right-wing Reaganite nuts who are clamoring to draw science's wagons in a circle. On the other hand, the Academy leadership has shown no inclination to lock horns with a government that provides 90 percent of its revenues.

The Committee, chaired by Dale R. Corson, President Emeritus of Cornell University, consists of 19 members, drawn from academe, defense-related industry, and government. All the members have received security clearances and briefings have been received from security-agency officials, including Admiral Inman, prior to his retirement.

Support for the study, totaling about \$300,000 has been provided or pledged by the National Science Foundation, the Defense Department, the American Association for the Advancement of Science, the American Chemical Society, and the American Geophysical Union; the Academy is also putting some of its own funds into the project.

An interim report is scheduled to be published in mid-September and the final report is due in March.

The Project Director is Lawrence E. McCray; tel. (202) 334-2498.

Committee on the Institutional Means for Assessment of Risks to Public Health. This one grows out of a Congressional appropriations amendment which provided the Food and Drug Administration \$500,000 to engage the Academy for a study on the management of risk assessment. The study, which got underway last October, with a final report scheduled by January 31, 1983, is to examine: the merits of having separate agencies assess and regulate public-health risks; the feasibility of assigning such risk assessments to one federal agency; the feasibility of developing risk-assessment guidelines for all federal agencies, and issues that may arise in a separation of risk assessment and regulation. The Committee is chaired by Reuel A. Stallones, Dean of Public Health, University of Texas, Houston.

The Project Director is Lawrence E. McCray; tel. (202) 334-2243.

Committee on Behavioral Research and Training Issues Relevant to the Mission of the Secret Service. Organized under the Academy's Institute of Medicine (IOM), the Committee grows out of an IOM workshop that resulted in the publication last year of a report, *Behavioral Science and the Secret Service: Toward the*

Prevention of Assassination (\$9.95 National Academy Press). Following that publication, the Secret Service asked the IOM to stay with the subject, and, as described in an IOM summary, help the Secret Service devise a research program to identify possibly dangerous persons, appraise training programs, serve as a peer-review group for research proposals submitted to the Secret Service, and "periodically assess how research activities and training programs are being implemented by the Secret Service." (Meanwhile, in preparation for its new-found interest in psychology, the Secret Service has established a senior staff position for a research psychologist, and is now looking over applicants for the post.)

The follow-on to the workshop report officially began in May and is to run for 20 months under a \$290,000 contract that the Secret Service has awarded the Academy. It's not official yet, but the study is expected to be chaired by W. Walter Menninger, Senior Staff Psychiatrist at the Menninger Foundation, Topeka, who chaired the planning committee for the workshop.

The Project Director is Fredric Solomon, a psychiatrist on the IOM staff; tel. (202) 334-2328.

Committee on Priority Mechanisms of the Board on Toxicology and Environmental Health Hazards. The Committee is responsible for the second phase of a three-year program financed by the National Toxicology Program at an annual rate of \$700,000. The first phase, completed last year, resulted in a report, *Strategies to Determine Needs and Priorities for Toxicity Testing, Volume I, Design* (great confusion, no clear word at the Academy on how to get a copy.) The second phase, now underway, is intended to develop criteria for setting priorities in testing chemicals. A report is due in October.

The committee is chaired by Arthur C. Upton, former Director of the National Cancer Institute, who is Chairman of the Institute of Environmental Medicine at NYU Medical Center.

Senior Staff are Walter Rosen and Samuel McKee; tel. (202) 334-2616.

NSF Names Asst. Director

The White House has announced the selection of Edward A. Knapp, head of the Accelerator Technology Division at the Los Alamos National Laboratory, to become Assistant Director for Mathematical and Physical Sciences at the National Science Foundation. He succeeds William Klemperer, who returned to a chemistry professorship at Harvard last August. The NSF post is a presidential appointment that requires Senate confirmation.

Academe Leaning More on Part-time Hiring

Institutions of higher education—from the PhD-granting elite to two-year community colleges—are increasingly relying on part-time scientists and engineers for teaching and research, according to a new manpower analysis by the National Science Foundation.

The reasons for this shift range from lack of candidates for relatively low-paying computer-science posts to shortages of full-time openings in tenure-clogged departments. But, whatever the causes, NSF reports, the trend toward hiring part-timers is well-established and is accelerating.

"During the 1973-80 period," NSF states, "part-time employment of S/E (science and engineering) professionals rose at a more rapid rate than full time—an average annual rate of 5 percent compared with 2 percent." From 1980 to 1981, the increase in part-timers jumped to 8 percent, while the growth rate for full-time employees in these fields remained at 2 percent. The most rapid growth of part-time employment in 1980-81 was at two-year institutions, up 14 percent; the doctorate-granting schools went up 7 percent.

"In 1981," NSF continues, "full-time S/E personnel represented more than three-quarters of the total number of scientists and engineers employed in higher education, but an increasing use of part-time S/E faculty was evident in all disciplines except the environmental sciences and psychology. The largest relative jump was seen in part-time employment among mathematical/computer scientists, up by 19 percent between 1980 and 1981, compared to a 4-percent rise in full-time professionals and an 8-percent overall increase in this field."

The report added that institutions are increasingly turning to part-timers to fill computer-related vacan-

cies created by higher pay in industry. In engineering, where some 1600 of 16,200 fulltime faculty posts were unfilled last year, NSF found that many institutions turned to part-timers and graduate teaching assistants.

Meanwhile, there's been a slowdown in growth of the number of scientists and engineers—full-time or that odd bird, the full-time equivalent (FTE)—engaged in research and development in institutions of higher education. That there has been any growth at all is a bit surprising, given the lamentations coming from the research sector of academe. But, according to NSF, "The number of FTE academic scientists and engineers engaged in separately budgeted research and development rose 1 percent in 1981 to over 57,000...This increase," NSF went on, "matched the average yearly gain since 1978, but was down from the average 4 percent per year increase between 1973 and 1978."

The realities of employment on campus may be blurred, however, by what NSF describes as "The growing practice by doctorate-granting institutions of utilizing graduate research assistants (up by 4 percent per year between fall 1974 and fall 1980)..." These low-paid troops, who are not included in the FTE counts, "may be offsetting the use of full-time professional staff for academic R&D efforts," NSF states.

(These data are from a four-page summary, NSF 82-312, based on statistical tables contained in an NSF report, *Academic Science: Scientists and Engineers, January 1981*, NSF 82-307. Both the summary and the report are available without charge from NSF, Division of Science Resources Studies, 1800 G St. NW., Washington, DC 20550.)

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